Methods: Infants who underwent pacemaker installation between April 2000 and October 2012 at our hospital were selected. Sick sinus syndrome (SSS) or congenital complete atrioventricular block (CCAVB) was an indication for atrial pacing or ventricular pacing by endocardial pacing; cases with acquired atrioventricular block post-surgery was an indication for ventricular pacing by epicardial pacing. All patients received a 5-day antibiotic treatment before discharge.
Results: Among the 49 infants (30 males, 19 females; age, 1.53±0.78 years; weight, 10.86±3.25 kg), 18 underwent endocardial pacing and 31, epicardial pacing; VVI was used in 48 cases and DDD, 1 case. Interventional therapy was administered before installation in two cases of atrial septal defect and two cases of patent ductus arteriosus. Thirty-eight cases were followed up (average duration, 4.86 years). The pacemaker was changed in 13 cases because of battery depletion, and the lead was changed in 7 cases because it fell off or was displaced. In one case, atrioventricular conduction was recovered 21 days later and the lead was removed. Wound infection and dehiscence occurred in two cases, 1 and 3 months later. Cured by wound debridement, re-suture and antibiotic treatment. Cardiac insufficiency occurred in one case after 8 years was cured with CRT. Epicardial pacing was replaced by endocardial DDD in three cases, and in three cases of endocardial pacing, VVI was replaced by DDD.
Conclusions: Thus, pacemaker installation in infants is safe and effective with few complications. Etiological analysis and prompt treatment are necessary for some complications, and the pacing mode should be selected based on patient characteristics and disease pathogenesis.

GW25-e2216

Predictive value of HATCH score for recurrence of atrial fibrillation after electrical cardioversion

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Objectives: New research has indicated that HATCH score is useful for prediction of paroxysmal atrial fibrillation (AF) to persistent AF based on HATCH score reflecting the maintenance of AF substrate. This study aims to investigate predictive value of HATCH score for recurrence of AF in patients with electrical cardioversion for AF.
Methods: 102 atrial fibrillation patients was selected in our study, who was accepted the synchrony direct current shock in the first affiliated hospital of Dalian Medical University from January 2008 to December 2011. There was 12 the persistence atrial fibrillation patients who was accepted emergent direct current shock because of the serverity symptom, 54 patients in a suitable time, 36 patients in the preoperative period of the atrial fibrillation ablation. These patients were marked by HATCH score. After cardioversion, following-up by telephone for one year, electrocardiogram or ambulatory electrocardiogram were applied.
Results: After following-up of one year, AF recurrence in 53 patients (52%) was observed. HATCH scores were calculated in 37 cases (36.3%) with 0 score, 30 cases (29.4%) with 1 score, and 35 cases (34.3%) with≥2 scores, HATCH scores is higher in patients with AF recurrence (1.81±1.4 vs 0.61±0.7, P<0.05). In AF recurrence group, the number of patients with HATCH scores from 0 to more than 2 were 11 (20.8%), 14 (26.4%), and 28 (52.8%). In non-recurrence group, the number of patients with HATCH scores from 0 to more than 2 were 26 (53.1%), 16 (32.6%), 7 (14.3%). The difference of HATCH score between the two group has statistical significance (P<0.05), it indicates that HATCH score could be predictive AF recurrence after cardioversion.
Conclusions: The HATCH score maybe useful for prediction of AF recurrence after cardioversion.

GW25-e2249

Correlation analysis of P-wave terminal force in lead V1 (PTFV1) with HATCH score

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Objectives: This study assumes that the ECG examination can identify the patients of high-risk progress from paroxysmal atrial fibrillationto persistent atrial fibrillation. By analyzing the correlation of P-wave terminal force in lead V1 (PTFV1) and paroxysmal atrial fibrillation progression risk scoring system (HATCH score), provide a new prediction method of risk of progression in patients with paroxysmal atrial fibrillation.
Methods: We reviewed and Statistics HATCH score and PTFV1 in 180 Nonvalvular paroxysmal atrial fibrillation patients hospitalized and analyzed correlation of PTFV1 and HATCH score by using Spearman rank. According to HATCH score of 0, 1 and≥2, We divided the cases into 3 groups. According to the outcome of atrial fibrillation, We divided the cases into the persistent atrial fibrillation group by progressing from paroxysmal atrial fibrillation (Progressive group) and the Paroxysmal atrial fibrillation group still (Paroxysmal group). According to the cause of atrial fibrillation, We divided the cases into the pathological atrial fibrillation group (pathological group) and the Lone atrial fibrillation group (isolated group).we statistical analysis on the above each group respectively. Persistent atrial fibrillation as the judgment standard for progress, ROC curve drawing, select the best point, and calculating the area under the curve and sensitivity, specificity.
Results: (1) PTFV1 (0.0501±0.0242) and HATCH score (0.9500±1.069) was significantly and positively correlated (r =0.550, P<0.01) in 180 Nonvalvular paroxysmal atrial fibrillation patients. (2) The PTFV1 of the group which HATCH score is 1 was slightly larger than PTFV1 of the group which HATCH score is 0, but the PTFV1 come from two groups had no significant difference (P>0.05); PTFV1 of the group which HATCH score≥2 was significantly higher than that of the group which HATCH score in 1, and the difference was statistically significant (P<0.01). (3) After an average of 1 year's follow-up, HATCH score and PTFV1 in the persistent atrial fibrillation group by progressing from paroxysmal atrial fibrillation (Progressive group) was significantly higher than the Paroxysmal atrial fibrillation group still (Paroxysmal group), and the difference was statistically significant (P<0.05, P<0.01). (4) HATCH score and PTFV1 in the pathological atrial fibrillation group (pathological group) was significantly higher than the Lone atrial fibrillation group (isolated group), and the difference was statistically significant (P<0.01, P<0.01). (5) 0.07 as the best critical point on the ROC curve, PTFV1>0.07 mm·s predicted the risk of progression of atrial fibrillation which sensitivity was 70%, the specificity was 81.8%, the area under the curve was 0.876, the difference comparing with AUC=0.5 was statistically significant (95% CI 0.794-0.959, P<0.01).
Conclusions: PTFV1 may as a noninvasive indicator for predicting the progression of paroxysmal atrial fibrillation to persistent atrial fibrillation has important clinical significance.

GW25-e2404

Aging might increase the incidence of infection from permanent pacemaker implantation: the results from a small scale clinical trial

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Objectives: The elderly is the major population receiving the implantation of a permanent pacemaker (PPM). Infection is a devastating complication of PPM use. However, to date, the relationship between age and PPM implantation infection kept confused. The present study is to verify the relationship between age and PPM implantation infection.
Methods: We designed a small-scale clinical trial, which included 162 adult and 292 elder patients. All patients received the implantation of PPM. Demographic and clinical data were collected. The tissue solutions were got from the deep pockets during the operation. Subcutaneous tissue samples solution were collected in three time points, the first sample was got at skin incision, the second sample was got when the PPM had been implanted. And the third sample was got after saline rinse (0.9% NaCl quick rinse). And the tissue solutions were cultured. The presence of bacterial, and for bacterial identification and drug susceptibility testing were used as the indirect marker of PPM implantation.
Results: Finally, the data from 139 adult and 254 elder patients were used. The data demonstrated compared with that in the adult patients, subcutaneous bacterial survival rates were higher significantly in the elderly. Staphylococcus epidermidis is the major bacterial strain. The rinse decreased subcutaneous bacterial survival rates in the adult group. However, interestingly the present study failed to observe the rinse to exert an anti-bacterial effect in the elderly.
Conclusions: With the age increasing, PPM implantation might be easier to result in infection. Simple rinse can prevent implantation infection significantly. However, age alleviated the protective effects of rinse. Therefore, we should pay more attention to post-implantation infection in the elderly.

GW25-e4471

Value of three parameters related heart failure in predicting left atrial thrombus in Chinese patients with nonvalvular atrial fibrillation

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Objectives: To assess New York Heart Association (NYHA) functional class, left ventricular ejection fraction (LVEF), N-terminal pro-B-type natriuretic peptide (NT-proBNP) in predicting left atrial (LA) thrombus detected by transesophageal echocardiographic in Chinese patients with nonvalvular atrial fibrillation.
Methods: Transesophageal echocardiograms of 1013 patients (mean age 58.8±11.3 years; 32% female; 840 paroxysmal AF; mean CHADS2 score 0.95±0.94) with nonvalvular atrial fibrillation were retrospectively reviewed for LA thrombus.
Results: Transesophageal echocardiography revealed LA thrombi in 25 (2.5%) patients. LA thrombus was found in 2.8% of the NYHA I patients, 1.7% of NYHA II/III patients (P=0.28); in 2.3% of the patients with LVEF >40%, 14.3% of patients with LVEF ≤40% (P=0.04); in 1.3% of the patients with NT-proBNP <500 pg/mL, 5.6% of patients with NT-proBNP ≥500 pg/mL (P=0.001). Patients with LA thrombus had lower mean LVEF (59% vs. 65%, P<0.001), higher mean NT-proBNP (1221 pg/mL vs. 368 pg/mL, P<0.001). NT-proBNP ≥500 pg/mL had a sensitivity of 52% and specificity of 76.4% for diagnosing LA thrombus. LVEF ≤40% had a sensitivity of 8% and specificity of 98.8% for diagnosing LA thrombus. The c-statistics for predicting LA thrombi with LVEF and NT-proBNP were 0.64 (95% CI 0.52-0.77) and 0.72 (95% CI 0.62-0.81), respectively.
Conclusions: In three parameters related heart failure, both LVEF and NT-proBNP may have value for predicting LA thrombus in patients with nonvalvular atrial fibrillation but NYHA functional class may not. This may help refine the 'C' in CHADS2 or CHA2DS2-VASc score.